EAST Search History

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	267	GDH and mutant	US-PGPUB; USPAT; DERWENT	OR	ON	2006/06/23 13:12
L2	55833	thr	US-PGPUB; USPAT; DERWENT	OR	ON	2006/06/23 13:12
L3	99	l1 and l2	US-PGPUB; USPAT; DERWENT	OR	ON	2006/06/23 13:12
L4	1	l1 and thr366	US-PGPUB; USPAT; DERWENT	OR	ON	2006/06/23 13:13

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NEWS 1		Web Page URLs for STN Seminar Schedule - N. America
NEWS 2		"Ask CAS" for self-help around the clock
NEWS 3	JAN 17	Pre-1988 INPI data added to MARPAT
NEWS 4	FEB 21	STN AnaVist, Version 1.1, lets you share your STN AnaVist visualization results
NEWS 5	FEB 22	The IPC thesaurus added to additional patent databases on STN
NEWS 6	FEB 22	Updates in EPFULL; IPC 8 enhancements added
NEWS 7	FEB 27	New STN AnaVist pricing effective March 1, 2006
NEWS 8	MAR 03	Updates in PATDPA; addition of IPC 8 data without attributes
NEWS 9	MAR 22	EMBASE is now updated on a daily basis
NEWS 10	APR 03	New IPC 8 fields and IPC thesaurus added to PATDPAFULL
NEWS 11	APR 03	Bibliographic data updates resume; new IPC 8 fields and IPC thesaurus added in PCTFULL
NEWS 12	APR 04	STN AnaVist $500 visualization usage credit offered
NEWS 13	APR 12	LINSPEC, learning database for INSPEC, reloaded and enhanced
NEWS 14	APR 12	Improved structure highlighting in FQHIT and QHIT display in MARPAT
NEWS 15	APR 12	Derwent World Patents Index to be reloaded and enhanced during second quarter; strategies may be affected
NEWS 16	MAY 10	CA/CAplus enhanced with 1900-1906 U.S. patent records
NEWS 17	MAY 11	KOREAPAT updates resume
NEWS 18	MAY 19	Derwent World Patents Index to be reloaded and enhanced
NEWS 19	MAY 30	IPC 8 Rolled-up Core codes added to CA/CAplus and USPATFULL/USPAT2
NEWS 20	MAY 30	The F-Term thesaurus is now available in CA/CAplus
NEWS 21	JUN 02	The first reclassification of IPC codes now complete in INPADOC
NEWS EXPRESS		FEBRUARY 15 CURRENT VERSION FOR WINDOWS IS V8.01a, CURRENT MACINTOSH VERSION IS V6.0c(ENG) AND V6.0Jc(JP), AND CURRENT DISCOVER FILE IS DATED 19 DECEMBER 2005. V8.0 AND V8.01 USERS CAN OBTAIN THE UPGRADE TO V8.01a AT http://download.cas.org/express/v8.0-Discover/
NEWS HOURS		STN Operating Hours Plus Help Desk Availability
NEWS LOGIN		Welcome Banner and News Items
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FILE 'HOME' ENTERED AT 13:59:34 ON 23 JUN 2006

=> file medline
COST IN U.S. DOLLARS                                    SINCE FILE      TOTAL
                                                           ENTRY    SESSION
FULL ESTIMATED COST                                         0.21       0.21

FILE 'MEDLINE' ENTERED AT 14:00:01 ON 23 JUN 2006

 FILE LAST UPDATED: 22 JUN 2006 (20060622/UP).  FILE COVERS 1950 TO DATE.

 On December 11, 2005, the 2006 MeSH terms were loaded.

 The MEDLINE reload for 2006 is now (26 Feb.) available.  For details
 on the 2006 reload, enter HELP RLOAD at an arrow prompt (=>).
 See also:

    http://www.nlm.nih.gov/mesh/
    http://www.nlm.nih.gov/pubs/techbull/nd04/nd04_mesh.html
    http://www.nlm.nih.gov/pubs/techbull/nd05/nd05_med_data_changes.html
    http://www.nlm.nih.gov/pubs/techbull/nd05/nd05_2006_MeSH.html

 OLDMEDLINE is covered back to 1950.

 MEDLINE thesauri in the /CN, /CT, and /MN fields incorporate the
 MeSH 2006 vocabulary.

 This file contains CAS Registry Numbers for easy and accurate
 substance identification.

=> s gdh and mutant
          1031 GDH
            54 GDHS
          1045 GDH
                 (GDH OR GDHS)
        169375 MUTANT
         98956 MUTANTS
        225610 MUTANT
                 (MUTANT OR MUTANTS)
L1         124 GDH AND MUTANT

=> s l1 and (thr or t)
         13371 THR
           153 THRS
         13439 THR
                 (THR OR THRS)
       4221788 T
L2         103 L1 AND (THR OR T)

=> s  l2 and (thr366 or t366)
             4 THR366
             3 T366
L3           0 L2 AND (THR366 OR T366)

=> l2 and 366
L2 IS NOT A RECOGNIZED COMMAND
The previous command name entered was not recognized by the system.
For a list of commands available to you in the current file, enter
"HELP COMMANDS" at an arrow prompt (=>).

=> s l2 and 366
          5754 366
```

L4 0 L2 AND 366

=> l2 and asp
L2 IS NOT A RECOGNIZED COMMAND
The previous command name entered was not recognized by the system.
For a list of commands available to you in the current file, enter
"HELP COMMANDS" at an arrow prompt (=>).

=> s l2 and asp
20176 ASP
265 ASPS
20368 ASP
(ASP OR ASPS)
L5 7 L2 AND ASP

=> d ibib abs l5 1-7

L5 ANSWER 1 OF 7 MEDLINE on STN
ACCESSION NUMBER: 2005158903 MEDLINE
DOCUMENT NUMBER: PubMed ID: 15736973
TITLE: Spontaneous chemical reversion of an active site mutation: deamidation of an asparagine residue replacing the catalytic aspartic acid of glutamate dehydrogenase.
AUTHOR: Paradisi Francesca; Dean Jonathan L E; Geoghegan Kieran F; Engel Paul C
CORPORATE SOURCE: Department of Biochemistry, Conway Institute of Biomolecular and Biomedical Research, University College Dublin, Belfield, Dublin 4, Ireland.
SOURCE: Biochemistry, (2005 Mar 8) Vol. 44, No. 9, pp. 3636-43. Journal code: 0370623. ISSN: 0006-2960.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200505
ENTRY DATE: Entered STN: 29 Mar 2005
Last Updated on STN: 10 May 2005
Entered Medline: 6 May 2005

AB A **mutant** (D165N) of clostridial glutamate dehydrogenase (**GDH**) in which the catalytic **Asp** is replaced by Asn surprisingly showed a residual 2% of wild-type activity when purified after expression in Escherichia coli at 37 degrees C. This low-level activity also displayed Michaelis constants for substrates that were remarkably similar to those of the wild-type enzyme. Expression at 8 degrees C gave a **mutant** enzyme preparation 1000 times less active than the first preparation, but progressively, over 2 weeks' incubation at 37 degrees C in sealed vials, this enzyme regained 90% of the specific activity of wild type. This suggested that the **mutant** might undergo spontaneous deamidation. Mass spectrometric analysis of tryptic peptides derived from D165N samples treated in various ways showed (i) that the Asn is in place in D165N **GDH** freshly prepared at 8 degrees C; (ii) that there is a time-dependent reversion of this Asn to **Asp** over the 2-week incubation period; (iii) that detectable deamidation of other Asn residues, in Asn-Gly sequences, mainly occurred in sample workup rather than during the 2-week incubation; (iv) that there is no significant deamidation of other randomly chosen Asn residues in this **mutant** over the same period; and (v) that when the protein is denatured before incubation, no deamidation at Asn-165 is detectable. It appears that this deamidation depends on the residual catalytic machinery of the mutated **GDH** active site. A literature search indicates that this finding is not unique and that Asn may not be a suitable mutational replacement in the assessment of putative catalytic **Asp** residues by site-directed mutagenesis.

L5 ANSWER 2 OF 7 MEDLINE on STN
ACCESSION NUMBER: 2001306691 MEDLINE
DOCUMENT NUMBER: PubMed ID: 11341912
TITLE: Contribution of an aspartate residue, D114, in the active site of clostridial glutamate dehydrogenase to the enzyme's unusual pH dependence.
AUTHOR: Coughlan S; Wang X G; Britton K L; Stillman T J; Rice D W; Chiaraluce R; Consalvi V; Scandurra R; Engel P C
CORPORATE SOURCE: Department of Biochemistry and Conway institute of Biomolecular and Biomedical Research, University College Dublin, Belfield, Ireland.
SOURCE: Biochimica et biophysica acta, (2001 Jan 12) Vol. 1544, No. 1-2, pp. 10-7.
Journal code: 0217513. ISSN: 0006-3002.
PUB. COUNTRY: Netherlands
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200105
ENTRY DATE: Entered STN: 4 Jun 2001
Last Updated on STN: 4 Jun 2001
Entered Medline: 31 May 2001

AB Glutamate dehydrogenase from Clostridium symbiosum displays unusual kinetic behaviour at high pH when compared with other members of this enzyme family. Structural and sequence comparisons with **GDHs** from other organisms have indicated that the **Asp** residue at position 114 in the clostridial enzyme may account for these differences. By replacing this residue by Asn, a **mutant** protein has been created with altered functional properties at high pH. This **mutant** protein can be efficiently overexpressed in Escherichia coli, and several criteria, including mobility in non-denaturing electrophoresis, circular dichroism (CD) spectra and initial crystallisation studies, suggest a folding and an assembly comparable to those of the wild-type protein. The D114N **mutant** enzyme shows a higher optimum pH for activity than the wild-type enzyme, and both CD data and activity measurements show that the distinctive time-dependent reversible conformational inactivation seen at high pH in the wild-type enzyme is abolished in the **mutant**.

L5 ANSWER 3 OF 7 MEDLINE on STN
ACCESSION NUMBER: 2000167213 MEDLINE
DOCUMENT NUMBER: PubMed ID: 10702303
TITLE: Functions of amino acid residues in the active site of Escherichia coli pyrroloquinoline quinone-containing quinoprotein glucose dehydrogenase.
AUTHOR: Elias M D; Tanaka M; Izu H; Matsushita K; Adachi O; Yamada M
CORPORATE SOURCE: Department of Biological Chemistry, Faculty of Agriculture, Yamaguchi University, Yamaguchi 753-8515, Japan.
SOURCE: The Journal of biological chemistry, (2000 Mar 10) Vol. 275, No. 10, pp. 7321-6.
Journal code: 2985121R. ISSN: 0021-9258.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200004
ENTRY DATE: Entered STN: 13 Apr 2000
Last Updated on STN: 13 Apr 2000
Entered Medline: 3 Apr 2000

AB Several **mutants** of quinoprotein glucose dehydrogenase (**GDH**) in Escherichia coli, located around its cofactor pyrroloquinoline quinone (PQQ), were constructed by site-specific mutagenesis and characterized by enzymatic and kinetic analyses. Of

these, critical **mutants** were further characterized after purification or by different amino acid substitutions. H262A **mutant** showed reduced affinities both for glucose and PQQ without significant effect on glucose oxidase activity, indicating that His-262 occurs very close to PQQ and glucose, but is not the electron acceptor from PQQH(2). W404A and W404F showed pronounced reductions of affinity for PQQ, and the latter rather than the former had equivalent glucose oxidase activity to the wild type, suggesting that Trp-404 may be a support for PQQ and important for the positioning of PQQ. D466N, D466E, and K493A showed very low glucose oxidase activities without influence on the affinity for PQQ. Judging from the enzyme activities of D466E and K493A, as well as their absorption spectra of PQQ during glucose oxidation, we conclude that **Asp**-466 initiates glucose oxidation reaction by abstraction of a proton from glucose and Lys-493 is involved in electron transfer from PQQH(2).

L5 ANSWER 4 OF 7 MEDLINE on STN
ACCESSION NUMBER: 1998371044 MEDLINE
DOCUMENT NUMBER: PubMed ID: 9705344
TITLE: **Mutant** isolation of the Escherichia coli quinoprotein glucose dehydrogenase and analysis of crucial residues **Asp**-730 and His-775 for its function.
AUTHOR: Yamada M; Inbe H; Tanaka M; Sumi K; Matsushita K; Adachi O
CORPORATE SOURCE: Department of Biological Chemistry, Faculty of Agriculture, Yamaguchi University, Yamaguchi 753-8515, Japan.. yamada@agr.yamaguchi-u.ac.jp
SOURCE: The Journal of biological chemistry, (1998 Aug 21) Vol. 273, No. 34, pp. 22021-7.
Journal code: 2985121R. ISSN: 0021-9258.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199809
ENTRY DATE: Entered STN: 25 Sep 1998
Last Updated on STN: 25 Sep 1998
Entered Medline: 17 Sep 1998

AB Several **mutants** of quinoprotein glucose dehydrogenase (**GDH**) in Escherichia coli were obtained and characterized. Of these, significant **mutants** were further characterized by kinetic analysis after purification or by site-directed mutagenesis to introduce different amino acid substitutions. H775R and H775A showed a pronounced reduction of affinity for a prosthetic group, pyrroloquinoline quinone (PQQ), suggesting that His-775 may directly interact with PQQ. D730N and D730A showed low glucose oxidase activity without influence on the affinity for PQQ, Mg2+, or substrate, but D730R showed reduced affinity for PQQ. The spectrum of tryptophan fluorescence revealed that the local structure surrounding PQQ was not changed by D730N mutation. Based on these data, we assume that **Asp**-730 may occur close to PQQ and function as a proton (and also electron) donor to PQQ or acceptor from PQQH2. Substitutions of Gly-689, that are located at the end of a unique segment of **GDH** among homologous quinoprotein dehydrogenases, directed reduction of the affinity for PQQ or **GDH** activity. Therefore, the unique segment and **Asp**-730 may play a specific role for **GDH**, which might be related to the intramolecular electron transfer from PQQ to ubiquinone.

L5 ANSWER 5 OF 7 MEDLINE on STN
ACCESSION NUMBER: 95194599 MEDLINE
DOCUMENT NUMBER: PubMed ID: 7888103
TITLE: Altered GABAergic and glutamatergic transmission in audiogenic seizure-susceptible mice.
AUTHOR: Cordero M L; Ortiz J G; Santiago G; Negron A; Moreira J A
CORPORATE SOURCE: Department of Pharmacology, University of Puerto Rico,

School of Medicine, San Juan 00936-5067.
CONTRACT NUMBER: 2 SO6 GMO8224 (NIGMS)
SOURCE: Molecular neurobiology, (1994 Aug-Dec) Vol. 9, No. 1-3, pp. 253-8.
Journal code: 8900963. ISSN: 0893-7648.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199504
ENTRY DATE: Entered STN: 27 Apr 1995
Last Updated on STN: 3 Feb 1997
Entered Medline: 18 Apr 1995

AB The C57BL/10 SPS/sps mouse **mutant** are audiogenic seizure-susceptible. The enzymatic activities of glutamate decarboxylase (GAD), GABA aminotransferase (GABA-T), alanine aminotransferase (ALA-T), aspartate aminotransferase (**ASP-T**), and glutamate dehydrogenase (**GDH**) of whole brain supernatant are significantly reduced in these epileptic mice. GABA uptake is decreased in cortex, midbrain, and pons medulla. Previous studies showed the presence of two sodium-dependent GLU uptake systems in normal (SPS/SP) mice. Glutamate Umax by System 1 is significantly decreased in these mice, whereas the Umax value for System 2 is significantly increased in the epileptic mice.

L5 ANSWER 6 OF 7 MEDLINE on STN
ACCESSION NUMBER: 94311821 MEDLINE
DOCUMENT NUMBER: PubMed ID: 8037659
TITLE: The catalytic role of aspartate in the active site of glutamate dehydrogenase.
AUTHOR: Dean J L; Wang X G; Teller J K; Waugh M L; Britton K L; Baker P J; Stillman T J; Martin S R; Rice D W; Engel P C
CORPORATE SOURCE: Krebs Institute for Biomolecular Research, Department of Molecular Biology and Biotechnology, University of Sheffield, U.K.
SOURCE: The Biochemical journal, (1994 Jul 1) Vol. 301 (Pt 1), pp. 13-6.
Journal code: 2984726R. ISSN: 0264-6021.
PUB. COUNTRY: ENGLAND: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199408
ENTRY DATE: Entered STN: 25 Aug 1994
Last Updated on STN: 25 Aug 1994
Entered Medline: 16 Aug 1994

AB A putative catalytic aspartyl residue, **Asp**-165, in the active site of clostridial glutamate dehydrogenase has been replaced with serine by site-directed mutagenesis. The **mutant** enzyme is efficiently overexpressed in Escherichia coli as a soluble protein and can be successfully purified by the dye-ligand chromatographic procedure normally employed for the wild-type enzyme. By several criteria, including circular dichroism spectrum, sulphydryl reactivity with Ellman's reagent, crystallization and mobility in non-denaturing electrophoresis, the enzyme appears to be correctly folded. NAD+ protects the D165S **mutant** against modification by Ellman's reagent, suggesting unimpaired binding of coenzyme. In standard assays the specific activity is decreased 10(3)-fold in the reductive amination reaction and 10(5)-fold for oxidative deamination. Kinetic studies show that apparent Km values for NADH and 2-oxoglutarate are almost unchanged. The large reduction in the reaction rate coincides with a weakening of the affinity for ammonium ion (Km > 300 mM, compared with 60 mM for the wild-type). The data are entirely consistent with the direct involvement of D165 in catalysis rather than in the binding of coenzyme or 2-oxoglutarate.

L5 ANSWER 7 OF 7 MEDLINE on STN
ACCESSION NUMBER: 90370274 MEDLINE
DOCUMENT NUMBER: PubMed ID: 2395534
TITLE: The C57BL/10Bg sps/sps mouse: a **mutant** with absence-like seizures; neurochemical and behavioral correlates.
AUTHOR: Ortiz J G; Negron A E; Garcia M T; Rosado J E; Maldonaldo C S
CORPORATE SOURCE: Department of Pharmacology, University of Puerto Rico School of Medicine, San Juan.
SOURCE: Neuroscience letters, (1990 Jul 3) Vol. 114, No. 2, pp. 231-6.
Journal code: 7600130. ISSN: 0304-3940.
PUB. COUNTRY: Netherlands
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199010
ENTRY DATE: Entered STN: 9 Nov 1990
Last Updated on STN: 6 Feb 1998
Entered Medline: 11 Oct 1990

AB C57BL/10Bg sps/sps mice display behavioral arrest, similar to generalized absence seizures. Compared with the parent strain C57BL/10Bg SPS/SPS, the activities of glutamate decarboxylase (GAD, E. C. 2.6.1.15), GABA aminotransferase (GABA-**T**, E. C. 2.6.1.19), aspartate aminotransferase (**ASP-T**, E. C. 2.6.1.1), and glutamate dehydrogenase (**GDH**, E. C. 1.4.1.3) in whole brain crude supernatant were significantly reduced in the sps/sps mice. Alanine aminotransferase activity (ALA-**T**, E. C. 2.6.1.2), was not altered in any of the strains, and normalization of GAD, GABA-**T** and **GDH** activities by that of ALA-**T**, further revealed significant differences between the normal strain (SPS/SPS), the heterozygotes (SPS/sps), and behavioral arrest (sps/sps) mice. These results suggest the possible involvement of GABAergic and glutamatergic neurotransmission in the absence-like behavior displayed by sps/sps mice. Open field behavior of C57BL/10Bg sps/sps mice is characterized by periods of marked inactivity which easily distinguish affected homozygotes, from their heterozygotes littermates.

```
=> s  l1 and (thr or threonine)
         13371 THR
           153 THRS
         13439 THR
                 (THR OR THRS)
         45169 THREONINE
           316 THREONINES
         45313 THREONINE
                 (THREONINE OR THREONINES)
L6           1 L1 AND (THR OR THREONINE)

=> d ibib abs l6
```

L6 ANSWER 1 OF 1 MEDLINE on STN
ACCESSION NUMBER: 2002714401 MEDLINE
DOCUMENT NUMBER: PubMed ID: 12324473
TITLE: Substitution of Ser for Arg-443 in the regulatory domain of human housekeeping (GLUD1) glutamate dehydrogenase virtually abolishes basal activity and markedly alters the activation of the enzyme by ADP and L-leucine.
AUTHOR: Zaganas Ioannis; Spanaki Cleanthe; Karpusas Michael; Plaitakis Andreas
CORPORATE SOURCE: Departments of Neurology and Basic Sciences, University of

Crete, School of Health Sciences, Section of Medicine, 71500 Heraklion, Crete, Greece.
SOURCE: The Journal of biological chemistry, (2002 Nov 29) Vol. 277, No. 48, pp. 46552-8. Electronic Publication: 2002-09-24.
Journal code: 2985121R. ISSN: 0021-9258.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200301
ENTRY DATE: Entered STN: 17 Dec 2002
Last Updated on STN: 9 Jan 2003
Entered Medline: 8 Jan 2003
AB Human glutamate dehydrogenase (GDH) exists in GLUD1 (housekeeping) and in GLUD2-specified (brain-specific) isoforms, which differ markedly in their basal activity and allosteric regulation. To determine the structural basis of these functional differences, we mutagenized the GLUD1 GDH at four residues that differ from those of the GLUD2 isoenzyme. Functional analyses revealed that substitution of Ser for Arg-443 (but not substitution of Thr for Ser-331, Leu for Met-370, or Leu for Met-415) virtually abolished basal activity and totally abrogated the activation of the enzyme by l-leucine (1-10 mm) in the absence of other effectors. However, when ADP (0.025-0.1 mm) was present in the reaction mixture, l-leucine (0.3-6.0 mm) activated the mutant enzyme up to >2,000%. The R443S mutant was much less sensitive to ADP (SC(50) = 383.9 +/- 14.6 microm) than the GLUD1 GDH (SC(50) = 31.7 +/- 4.2 microm; p < 0.001); however, at 1 mm ADP the V(max) for the mutant (136.67 micromol min(-1) mg(-1)) was comparable with that of the GLUD1 GDH (152.95 micromol min(-1) mg(-1)). Varying the composition and the pH of the reaction buffer differentially affected the mutant and the wild-type GDH. Arg-443 lies in the "antenna" structure, in a helix that undergoes major conformational changes during catalysis and is involved in intersubunit communication. Its replacement by Ser is sufficient to impair both the catalytic and the allosteric function of human GDH .